Docket No. US 010202

Amendment
Serial No. 09/837,036

REMARKS

Claims 1-5 and 7-30 are pending in the application. Claims 1-5, 7-15 and 22-24 are rejected. Claims 16-21 and 25-30 are objected to but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

Claims 1, 8, 14 and 22 have been amended. No new matter has been added. Claims 6, 12 and 24 are cancelled.

Claims 1-3 and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over USP No. 6,125,147 to Florencio in view of Wittig (USP No. 6,011,498).

Applicant respectfully disagrees with, and explicitly traverses, the examiner's reasons for rejecting the claims. As will be shown there is no motivate to combine the teachings of Florencio and Wittig. Furthermore, even if their teachings were combined, the combined device would not include all the limitations recited in the claims. However, in order to advance the prosecution of this matter, applicant has amended claim 1 to more clearly state the determination of the estimated computation load.

Florencio, as read by applicant, teaches a MPEG video compression system and defines a fidelity indicative parameter signal that is used as a measure of the quality or fidelity of images or frames in the data signal. The fidelity indicative parameter is used, by the decoding system, to degrade high quality frames to a lower quality in order to equalize the overall picture. (See col. 8, lines 27-30, which state, in part, "[i]t will be noted that one technique used to equalize degradation levels is to further degrade one or more relatively high fidelity video or image frames.").

The fidelity indicative parameter is not analogous to the computation load recited in the claims. Florencio discloses that "fidelity of individual frames within a GOP structure tend to degrade after an initial high quality I-frame." (see col. 1, lines 52-55). Florencio re-iterates this degradation of transmitted frames in col. 8, lines 65-68 to col. 9, line 1, which state, in part, "a GOP structure having a relatively high fidelity I-frame followed by one or more P-frames and B-frames of diminishing fidelity." Florencio

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further describes how the fidelity indicative parameter is used to either lower or raise the quality of the video signal. (see col. 8, lines 13-20, which state in part "[s]ince degrading the fidelity of a video or image frame is typically easier ... appropriate frames will typically comprise those frames having a relatively high fidelity level. However, in the case of a fidelity parameter that is susceptible to enhancement, appropriate frames may comprise those frames having a relatively low fidelity lever."). Thus, rather than a determination of computation load, as recited in the claims, the fidelity indicative parameter determined by Florencio may indicate a high fidelity or a low fidelity and, hence, lower or raise the processing to reduce the "visual artifact known as breathing." (see col. 1, line 57).

Thus, the fidelity indicative parameter represents a message of the fidelity in the frame and may have an effect on the computation load, but it does not provide any information or an estimate of the computation load necessary to process a received video signal. Thus, Florencio fails to disclose determining "a computation load," as is recited in amended claim 1.

Wittig, as read by applicant, discloses that the macro block header includes the elements from which an estimate of computational load may be determined. However, Florencio does not disclose or suggest using these parameters to determine the fidelity indicative parameter. (see col. 7, lines 53-64, which state, in part, one or more of various image ... parameters such as frame type, frame position within GOP, frame spectrum and the like may be analyzed to determine a degradation level).

A claimed invention is prima facie obvious when three basic criteria are met. First, there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings therein. Second, there must be a reasonable expectation of success. And, third, the prior art reference or combined references must teach or suggest all the claim limitations.

Claim 1 is not obvious in view of the cited references because there is no teaching or suggestion to combine Florencio and Wittig. Furthermore, even if there were

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some motivation to combine the teachings of Florencio and Wittig as suggested by the examiner, the combined device would not include all the elements recited in the claims. The combined device would be able to determine a fidelity indicative parameter based on the header information taught by Wittig. However, as noted above the fidelity indicative parameter is not analogous to an estimation of computational load. Hence, the combined invention would not be obvious in view of the references cited.

Having shown that the cited references do not suggest or provide motivation to combine them, or even if combined would not include all the elements recited in the claim, applicant submits that the reason for the examiner's rejections of the claim has been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

With regard to claims 2, 3 and 7, these claims ultimately depend from independent claim 1, which has been shown to be allowable over the cited reference. Accordingly, claims 2, 3 and 7 are also allowable by virtue of their dependence from an allowable base claim.

Claims 4 and 5, stand rejected pursuant to 35 USC §103 as being unpatentable over Florencio and Wittig in view of USP No. 6,408,096 to Tan. It is the examiner's position that with regard to claim 4, Florencio and Wittig do not disclose prediction operation that defines a computation load, but Tan teaches the prediction operation. With regard to claim 5, Florencio and Wittig do not disclose the computation load is selectively adjusted by scaling the IDCT but Tan teaches the computation load is selectively adjusted by scaling the IDCT.

Applicant respectfully disagrees with the examiner. As noted above, Florencio discloses an MPEG system that generates a fidelity indicative parameter that is used by the decoder to equalize picture quality by essentially degrading high quality images to that of a lower quality image. (see col. 8, lines 1-5, which state, in part, [f]or example, those frames within the GOP having relatively high fidelity are degraded in terms of one or more frame parameters analyzed ... such that the inter-frame variance in fidelity degradation within the GOP is constrained to a level at or below a level resulting

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in a noticeable breathing artifact."). It was further shown that the combination of Florencio and Wittig fail to determine an estimate of computation load.

Tan, as read by applicant, discloses a system that includes a complexity estimator that estimates a complexity level at the encoder and transmits the complexity level to a decoder. The decoder processes the received frame and provides an actual processing level back to a scheduler that determines a series of weighting factors used to determine a weighted estimate of the complexity level. In this case, the complexity estimator that estimates the complexity level based on header information is included in the generating or encoding unit and the estimator that is in the decoding unit adjusts the provided complexity level by the actual complexity to provide a weighted complexity level.

Accordingly, the combination of Florencio, Wittig and Tan would not render obvious the invention disclosed in claim 4 as the combination of Florencio, Wittig fails to teach a decoder for determining computation load and Tan fails to teach a decoder with predication operation that defines the computation load based on the header information, as is recited in the claims.

Furthermore, even if the references cited were combined, the combined device would not include all the elements recited in the claim. Florencio and Wittig fail to teach a decoder for determining computation load and Tan fails to teach a decoder with predication operation that defines the computation load based on the header information, as is recited in the claims.

With regard to claim 5, this claim is also not obvious in view of the cited references as the combination of Florencio and Wittig fails to teach a decoder for determining computation load and Tan fails to teach a decoder with predication operation that defines the computation load as discussed with regard to claim 4.

Having shown that the cited references do not suggest or provide motivation to combine them, or even if combined would not include all the elements

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recited in the claims 4 and 5, applicant submits that the reason for the examiner's rejections of the claim has been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

Claims 8-11, 13-15 and 22-23 are rejected under 35 USC 103(a) as being unpatentable over Florencio in view of Tan.

Applicant respectfully disagrees with, and explicitly traverses, the examiner's rejection of the claims.

Claim 8 discloses a decoding system that includes a complexity estimator that estimates a complexity based on information included in the header information and that the information is used to determine an associated computation factor.

As noted above, Tan teaches processing that is performed at the encoder, and the resultant information is provided to and used by the decoding system. Tan teaches an operation at the decoder for determining a weighted computation load value based on information provided by the encoder and then adjusted by the actual complexity. Tan fails to teach determining a complexity level based on information in the header. One would not be motivated to combine the teachings of Florencio and Tan as the combined device does not teach the decoder performing an operation to determine computation load based on header information, as is recited in the claim.

Furthermore, even if the teachings of Tan could be used to refine the fidelity indicative parameter of Florencio based on the feedback provided by the decoder, this refinement of the fidelity indicative parameter is contrary to the teachings of Florencio as this parameter is a measure of the quality of images and should be unaffected by any feedback taught by Tan. Thus, the use of feedback of the combined device would defeat the operation of the Florencio device.

Such combination would further teach away from the teaching of Tan as Tan teaches that "[u]sing the indications of computational complexities and the computational graceful degradation methods simpler decoders can be implemented." However, the decoder suggested by the examiner would require it to determine the

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complexity level based on header information, which is a provided parameter. Hence, the decoder suggested by the examiner would be more complex than that proposed by Tan and would defeat the purpose of the teachings of Tan.

Having shown that claim 8 is not obvious in view of the cited references, applicant submits that the examiner's reason for rejecting the claim has been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claim.

With regard to claims 9-11 and 13, these claims ultimately depend from independent claim 8, which has been shown to be not obvious and allowable in view of the cited references. Accordingly, claims 9-13 are also allowable by virtue of their dependence from an allowable base claim.

With regard to independent claim 14, this claim recites a method for improving decoding that includes "calculating a total computation load ... based on the classification of header information." The examiner states Florencio does not specifically disclose an estimator for calculating a total computation load, however, Tan teaches a complexity estimator that is provided to and used by the decoder.

As discussed above neither Florencio nor Tan teach or suggest a decoding system determining a complexity estimator based on header information and a device formed from the combined teachings would not perform a determination of a complexity level at the decoder. Hence, the combined teachings of Florencio and Tan would not include all the elements claimed.

Having shown that the combined device resulting from the teachings of the cited references does not include all the elements of the present invention, applicant submits that the reasons for the examiner's rejections of the claims have been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

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With regard to claim 15, this claim depends from independent claim 14, which has been shown to be not obvious and allowable in view of the cited references. Accordingly, claim 15 is also allowable by virtue of its dependence from an allowable base claim.

With regard to independent claim 22, this claim was rejected for essentially the same reason recited in rejecting claims 8 and 14. Hence, the remarks made with regard to claims 8 and 14 are appropriate, and repeated, in response to the rejection of claim 22. Accordingly, for the remarks made with regard to claims 8 and 14, applicant submits that the reason for the examiner's rejection of claim 22 has been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

With regard to claim 23, this claim depends from independent claim 22, which has been shown to be not obvious and allowable in view of the cited references. Accordingly, claim 23 is also allowable by virtue of its dependence from an allowable base claim.

Claims 12 and 24 are rejected under 35 USC 103(a) as being unpatentable over Florencio and Tan as applied to claim 8 and 22 and further in view of Wittig.

Applicant respectfully disagrees with, and explicitly traverses the examiner's reason for rejecting the claims.

With regard to claims 12 and 24, these claims ultimately depend from independent claims 8 and 22, which have been shown to be not obvious and allowable in view of the cited references. Accordingly, claims 12 and 24 are also allowable by virtue of its dependence from an allowable base claim.

Having shown that the cited references do not suggest or provide motivation to combine them as suggested by the examiner, applicant submits that the reasons for the examiner's rejections of the claims have been overcome and can no longer

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be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of the claims.

Applicant, through his attorney, wishes to thank the examiner for his indication of allowable subject matter in claims 16-21 and claims 25-30, if rewritten to include the limitations of the base claim and any intervening dependent claims. However, applicant respectfully submits that for the amendments made to the claims and the remarks made herein all the claims are now placed in an allowable form. Accordingly, applicant elects not to amend the claims as indicated would be allowable by the examiner at this time, and reserves the right to amend them at a subsequent time.

Although the last Office Action was made final, this amendment should be entered. Claims 1, 8, 14 and 22 have each been amended to more clearly state the invention. More specifically, the claims have been amended to recite the elements of the header information upon which a computation load is determined for the purpose of assisting the examiner to better understand the matter being claimed. Since only explanatory functional language have been added, no matter has been added to the claims that would require comparison with the prior art or any further review. Accordingly, pursuant to MPEP 714.13, applicant's amendments should only require a cursory review by the examiner. The amendment therefore should be entered without requiring a showing under 37 CFR 1.116(b).

Having addressed the examiner's objections and rejections under 35 USC §103, applicant submits that for the amendments and remarks made herein the reasons for the examiner's rejections have been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejections and the issuance of a Notice of Allowance.
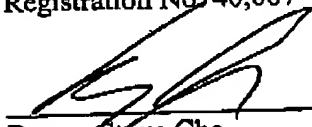
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Applicant, through his attorney, would further thank the examiner for his reply to the applicant's remarks made in the prior response, which further explains the examiner's reason for rejecting the claims. However, applicant believes that the examiner's use of the fidelity indicative parameter as being analogous to a computation load is incorrect.

Should any unresolved issues remain that the examiner believes may be resolved via a telephone call, the examiner is invited to call applicant's attorney at the telephone number below.

No fees are believed necessary for the filing of this Amendment and Response.

Respectfully submitted,

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Date: September 30, 2004

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